

## Claims

- [c1] 1. A system for applying spreadsheet and database operations to the cells of one or more original worksheets resulting in a new worksheet representative of spreadsheet and database operations, comprising:
- a relational algebra engine for:
    - performing relational algebra operations contained in the original worksheets;
    - creating a temporary results table comprising the results of the performed relational algebra operations; and
    - creating a mapping table correlating the original worksheet cells with the temporary results table,
  - a re-mapping engine for:
    - adjusting spreadsheet operations that refer to the original worksheet cells to refer to the temporary results table; and
    - creating a re-mapped worksheet containing the adjusted spreadsheet operations and the results of the relational algebra operations, and
  - a computation engine for:
    - recalculating spreadsheet values that have been adjusted to create the new worksheet.
- [c2] 2. The system of claim 1 wherein a cell numbering scheme is applied to the new worksheet rather than a database naming scheme.
- [c3] 3. The system of claim 1 wherein universal resource identifiers (URI) can be used to specify the location of one or more original worksheets.
- [c4] 4. The system of claim 1 wherein the relational algebra operations can simultaneously query the original worksheets and a separate database.
- [c5] 5. A method of applying spreadsheet and database operations to the cells of one or more original worksheets resulting in a new worksheet representative of spreadsheet and database operations, comprising:
- performing relational algebra operations contained in the original worksheets;
  - creating a temporary results table comprising the results of the performed relational algebra operations;
  - creating a mapping table correlating the original worksheet cells with the

temporary results table;  
 adjusting spreadsheet operations that refer to original worksheet cells to refer to the temporary results table;  
 creating a re-mapped worksheet containing the adjusted spreadsheet operations and the results of the relational algebra operations; and  
 recalculating spreadsheet values that have been adjusted to create the new worksheet.

- [c6] 6. The method of claim 5 wherein a cell numbering scheme is applied to the new worksheet rather than a database naming scheme.
- [c7] 7. The method of claim 5 wherein universal resource identifiers (URI) can be used to specify the location of one or more original worksheets.
- [c8] 8. The method of claim 5 wherein the relational algebra operations can simultaneously query the original worksheets and a separate database.
- [c9] 9. A computer program product including a computer program for applying spreadsheet and database operations to the cells of one or more original worksheets resulting in a new worksheet representative of spreadsheet and database operations, the computer program comprising:  
 instructions for creating a temporary results table containing the results of relational algebra operations contained in the original worksheet cells;  
 instructions for creating a mapping table correlating the original worksheet cells with the temporary results table;  
 instructions for adjusting spreadsheet operations that refer the original worksheet cells to refer to the temporary results table;  
 instructions for creating a re-mapped worksheet containing the adjusted spreadsheet operations and the results of the relational algebra operations; and  
 instructions for recalculating spreadsheet values that have been adjusted to create the new worksheet.
- [c10] 10. The computer program product of claim 9 wherein the computer program further comprises instructions for providing a cell numbering scheme to the new worksheet rather than a database naming scheme.

- [c11] 11. The computer program product of claim 9 wherein universal resource identifiers (URI) can be used to specify the location of one or more original worksheets.
- [c12] 12. The computer program product of claim 9 wherein the relational algebra operations can simultaneously query the original worksheets and a separate database.
- [c13] 13. A system for applying spreadsheet and database operations, to the cells of one or more original worksheets resulting in a new worksheet representative of spreadsheet and database operations, comprising:  
means for performing relational algebra operations contained in the original worksheet cells;  
means for creating a temporary results table comprising the results of the performed relational algebra operations;  
means for creating a mapping table correlating original worksheet cells with the temporary results table;  
means for adjusting spreadsheet operations that refer to original worksheet cells to refer to the temporary results table;  
means for creating a re-mapped worksheet containing the adjusted spreadsheet operations and the results of the relational algebra operations; and  
means for recalculating spreadsheet values that have been adjusted to create the new worksheet.
- [c14] 14. The system of claim 13 wherein a cell numbering scheme is applied to the new worksheet rather than a database naming scheme.
- [c15] 15. The system of claim 13 wherein universal resource identifiers (URI) can be used to specify the location of one or more original worksheets.
- [c16] 16. The system of claim 13 wherein the relational algebra operations can simultaneously query the original worksheets and a separate database.